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10/020,014	10/29/2001	Jeffrey Gullicksen	10.0412	7261

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EXAMINER	
JAIN, RAJ K	

ART UNIT	PAPER NUMBER
2664	

DATE MAILED: 01/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/020,014	GULLICKSEN ET AL.	
	Examiner	Art Unit	
	Raj Jain	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 November 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-39 examined on the merits.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-26, 29-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dragone (US006542655B1) in view of Yoshifuji (US005917426A).

Regarding claims 1, 2, 16, 29 and 32, Dragone discloses method and system of an optical crossconect switching system with routers combined with the space switches (see Fig. 4A, routers 401). The method comprising:

- establishing a configuration for a switch element (Fig. 2 having NxN crossconnect switch configurable to connect with any number of inputs/outputs as appropriate),

- the configuration comprising a plurality of connections between data lines in a first plurality of data lines and data lines in a second plurality of data lines (see Fig. 2, I1-In for input data lines, O1-On for output data lines,), the switch element including a set of ingress devices (see Fig 3, 301), a set of center stage devices (Figs. 2 & 3, 302) and a set of egress devices (Fig. 3, 303) each connection including at least one of the ingress devices, one of the center stage devices and one of the egress devices,

wherein multiple connections are extended across each center stage device (see Figs. 3, 4a-e, abstract, col 1 lines 32 – col 2 line 11, col 5 lines 32-50, the clos switch includes Fig 4b an ingress device 402, center device 401, and egress device 402 with multiple connections across each center stage device).

-logically modeling the switch element and mapping a logical model to the switch element. wherein the set of ingress devices are modeled as one or more logical ingress devices, the set of center stage devices are modeled as one or more logical center stage devices, and the set of egress devices are modeled as one or more logical egress devices (see col 6 line 58 – col 7 line 54, Figs. 4a, 5 – 7, each switch element is independently redesigned to incorporate one or more routers within a given switch element such as ingress, center or egress switches as appropriate. Reducing the number of routers, simplifies loss and crosstalk problems by appropriately optimizing ingress and egress switch elements)

Dragone also discloses the use of routers within the center stage device and its ingress devices and egress devices, however, Dragone fails to disclose a failure or a switching event to switch input/output signals across its network by selecting and rearranging the appropriate connections between input, center and output devices.

Yoshifuji discloses a failure or switching event to switch input/output signals across its network by selecting and rearranging the connections across at least one of the center stage devices in response to a switching event (see abstract, col 1 lines 5-10, 45-56, col 2 lines 5-15, col 11 lines 9-49, a selection and retrieval operation is performed to reroute one or more connections from an ingress device (Fig. 4) 10-1 thru

a center device 20-1 to an egress device 30-1 due to a failure of an event within at any data lines across the clos switching network, so that the signal is maintained throughout the system as if no fault had occurred).

Rerouting clos network switching elements due to network failure within one or more of its switches allows for continuous operation of the network with minimal data loss if any and high efficiency.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Dragone routers to incorporate the capabilities of detecting and rearranging network switching elements as appropriate to reroute signals with minimal disturbance to the system and minimal data loss within the network.

Regarding claims 3-8, 17-19, 31, 36, and 37, Dragone discloses method and system of an optical cross connect switching system with routers combined with the space switches (see Fig. 4A, routers 401).

Dragone fails to disclose a failure event or the like for the switching elements to switch input/output signals across its network by selecting and rearranging the appropriate connections between input, center and output devices.

Yoshifuji discloses a failure event or the like for the switching elements to switch input/output signals across its network by selecting and rearranging the connections across at least one of the center stage devices in response to a switching event/failure (see abstract, col 1 lines 5-10, 45-56, col 2 lines 5-15, col 3 lines 44-64, col 5 lines 11-33, a selection and retrieval operation is performed to reroute one or more connections

from an ingress device (Fig. 4) 10-1 thru a center device 20-1 to an egress device 30-1 due to a failure of an event within at any data lines across the clos switching network, so that the signal is maintained throughout the system as if no fault had occurred. The main control unit 6 (Fig. 1) manages and drives the reroute-search and renewal processing unit 9 on detection of any disorder in the network data signals.)

Rerouting clos network switching elements due to network failure within one or more of its switches allows for continuous operation of the network with minimal data loss if any and high efficiency.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Dragone routers to incorporate the capabilities of detecting and rearranging network switching elements as appropriate to reroute signals with minimal disturbance to the system and minimal data loss within the network.

Regarding claims 9-11, Dragone discloses a first center stage device bridging communications from first data line to any other data line (see Figs. 3, 4a-e, abstract, col 1 lines 32 – col 2 line 11, col 5 lines 32-50, the clos switch includes Fig 4b an ingress device 402, center device 401, and egress device 402 with multiple connections across each center stage device).

Regarding claims 12, 15, 20, 21, 24 and 33-35, Dragone discloses each ingress device in the set of ingress devices include a plurality of routers, the plurality of routers for at least the first ingress device connecting the first ingress device to each of the center stage devices in the set of center stage devices, and wherein establishing a

configuration for the switch element includes configuring each router of at least the first ingress device to receive communications from only one of the first data lines (see Figs. 4a-e, col 5 lines 33-67, col 6 lines 17-27, each router within the center stage can be configured as desired as appropriate.).

Regarding claims 13, 22, 25 and 38, Dragone discloses an N total of data lines in the first plurality of data lines that connect to a first ingress device in the set of ingress devices, a number S represents a total of routers in the first ingress device that are used, and wherein establishing a configuration for the switch element includes selecting the number N and the number N is an integer equal to or rounded up from a ratio of N/S (see Figs. 3 & 4, col 3 lines 1-32).

Regarding claims 14, 23, 26 and 39, Dragone discloses a number M representing a size of each router in the set of ingress devices, a number K represents a total of center stage devices in the set of center stage devices, and wherein establishing a switching configuration includes selecting the number M to be equal to the number K (see col 5 lines 42-45).

Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dragone (US006542655B1) as applied to claim 16 above, and in view of Yoshifuji (US005917426A), and further in view of Arzt.

Dragone discloses method and system of an optical cross connect switching system with routers combined with the space switches (see Fig. 4A, routers 401).

Yoshifuji discloses a failure event or the like for the switching elements to switch input/output signals across its network by selecting and rearranging the connections across at least one of the center stage devices in response to a switching event/failure (see abstract, col 1 lines 5-10, 45-56, col 2 lines 5-15, col 3 lines 44-64, col 5 lines 11-33).

Dragone and Yoshifuji fail to disclose a bank of clos switchable elements within a network.

Arzt discloses a bank of clos switchable elements within a network (see Figs. 7a-7b, col 8 line 42 – col 9 line 7 each bank contains its own clos network with an ingress devices, center devices and egress devices, named as primary, secondary and tertiary respectively. The tertiary elements are connected to a switch array that further connects them to either first or second bank outputs as appropriate).

The unique combination of two different types of connection schemes, used both at the input and the output of the switching router's two banks, inherently provides non-blocking characteristics. Because a connection from a given input made to a matrix in the first bank, is not repeated in the corresponding connection made to a matrix in the second bank, there will always be an open signal path available.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made incorporate a banking type scheme or Arzt within Dragone so as to provide further non-blocking capabilities within a switch network and further redundancy as desired.

Response to Arguments

Applicant's arguments with respect to claims 1-39 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raj Jain whose telephone number is 571-272-3145. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax number for the organization where this application is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

RJ
January 4, 2006

Ajit Patel
Primary Examiner